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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

BLACKBIRD TECH LLC d/b/a BLACKBIRD TECHNOLOGIES,
 	
    Plaintiff,
 	
vs.
 	
CLOUDFLARE, INC.
 	
    Defendant.
	CASE NO. 17-CV-06112-VC
	
	BLACKBIRD TECHNOLOGIES' OPPOSITION TO CLOUDFLARE'S MOTION FOR JUDGMENT ON THE PLEADINGS UNDER 35 U.S.C. § 101 (ECF NO. 37)
	
	Hearing Date: 10:00am, January 11, 2018

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STATEMENT OF THE ISSUES TO BE DECIDED

Whether claims 8 and 24 of U.S. Patent No. 6,453,335, entitled "Providing an Internet Third Party Data Channel," are directed to ineligible subject matter under 35 U.S.C. § 101.[1]

SUMMARY OF THE ARGUMENT

The asserted claims of the '335 patent "improve the functioning of the computer itself" and are therefore patentable under section 101. *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2359 (2014). Claims 8 and 24 are directed to a method and system, respectively, in which an intermediate networking device on the internet (*e.g.*, router, proxy, or filter) monitors specific properties in the protocols (*e.g.*, HTTP, HTML, *etc.*) associated with communications between a client and server and, based on the detection of certain of those properties, modifies the communication between the client and server only when the data transmission rate between them falls below a certain threshold. In this way, the asserted claims describe the technical means for improving on then-existing internet systems, which given conventional internet protocols, were limited to two parties and which therefore did not allow for the inclusion of data by third parties.

STATEMENT OF THE RELEVANT FACTS

I.   Procedural Background

Plaintiff Blackbird Technologies sued Defendants Cloudflare and Fastly on March 16, 2017, in the District of Delaware for infringing the '335 patent based on their respective operation of so-called content delivery networks. (Compl., ECF No. 1).[2, 3] Such networks, often called "CDNs" for short, are geographically-distributed networks of proxy servers that deliver web content from various content providers, such as websites, to ordinary end users, with the aim of improving the availability and performance (*e.g.*, speed) of web communications. (*See* First Am. Compl., ECF No. 13 ¶¶ 13-22). Cloudflare, for instance, touts that it "dramatically

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[1] A copy of the '335 patent is available at ECF No. 13-1.

[2] All docket citations are to the Cloudflare action (-06112-VC) unless otherwise noted.

[3] On December 1, 2017, Blackbird Technologies also filed suit against Incapsula, Inc., another CDN operator, for infringing the '335 patent. (*See* 4:17-cv-06883). Incapsula has not yet answered or responded to Blackbird Technologies' complaint at the time of this Opposition.

improves website performance through our global CDN and web optimization features." (*See* http://www.cloudflare.com). CDNs deliver a large portion of web content today.

On June 20, 2017, Defendants Cloudflare and Fastly moved to transfer the litigation to this District based on convenience grounds. (Mot. to Transfer, ECF No. 20). On September 15, 2017, while Defendants' transfer motion was pending, Defendant Fastly moved for judgment on the pleadings that the '335 patent was invalid under section 101. (*See* -06115-VC, MJOP, ECF No. 26). The next business day, on September 18, Defendant Cloudflare likewise moved for judgment on the pleadings, "join[ing]" Defendant Fastly's motion and "submit[ting its own] brief to highlight additional points." (Def.'s Br., ECF. No. 38 at 1). As a result, Defendants Fastly and Cloudflare submitted a combined 27 pages of opening briefing on the supposed invalidity of the '335 patent under section 101.

On October 11, 2017, the Delaware Court granted Defendants' transfer motion. (Transfer Op., ECF No. 41). Defendant Fastly, the lead movant, agreed all motion deadlines were stayed in the meantime pending transfer. On October 30, both actions were administratively opened in this District and, on November 15, were assigned to this Court. (Order Reassigning Case, ECF No. 53). On November 28, Defendants noticed a hearing date of January 11, 2018, on their joint section 101 motion. (ECF No. 58).

On December 15, 2017, Blackbird Technologies and Defendant Fastly resolved the litigation between them. (06115-VC, Stip. of Dismissal, ECF No. 42). Given that Defendant Cloudflare's motion does not stand on its own (Cloudflare's Br., ECF No. 38), Blackbird Technologies requested that Defendant Cloudflare withdraw its motion, to more effectively present the issues to the Court. (Gerasimow decl., Ex. A, at 2). Defendant Cloudflare refused, instead asserting that it could continue to "reference" and incorporate Defendant Fastly's briefing into its own despite the Fastly action having been dismissed and closed by stipulation. (*Id.*). Although it disagrees with Cloudflare's assessment, Blackbird Technologies submits this Opposition, consistent with the Court's established briefing limits, addressing the key issues raised by both Defendants.

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II.   The '335 Patent-in-Suit

1.   The Technological Innovations of the '335 Patent-in-Suit

The patent applications leading to the '335 patent were originally filed in July and August, 1998, when the web was still in its infancy.[4] ('335 patent, "Foreign Application Priority Data"). Communication across the internet relies on a series of protocols, or systems of rules that prescribe how entities are to transmit and receive data. (*Id.* at 1:11-30).[5] Lower-level internet protocols govern the fundamentals of transporting data, while higher-level protocols implement specific applications of the internet, such as the web, file transfer, or electronic mail, among others. (*Id.*). Common examples of these higher-level protocols (sometimes called application-level protocols) include the Hypertext Transfer Protocol (HTTP), the File Transfer Protocol (FTP), and the Simple Mail Transfer Protocol (SMTP). (*Id.* at 4:43-54).

Many application-level protocols are examples of end-to-end protocol architectures, and thus specify communications between two endpoints, such as an end user and a server hosting a webpage. (*Id.* at 1:31-36). As the background section of the '335 patent explains, prior to the inventions of the '335 patent, "[a] basic paradigm of internet client/server applications and the associated application level protocols [was] that a logical or physical connection between two parties, namely the internet client and the internet server, is assumed." (*Id.* at 1:31-33).

One advantage of end-to-end protocols is that they simplify communication from the endpoints' perspective. Intermediate network nodes between the two endpoints, such as routers and the like, are invisible or "transparent" to the endpoints. (*Id.* at 1:37-39). Although scores of intermediate network nodes may be required to transmit traffic between two endpoints on the internet, each intermediate node does "not contribut[e] to the data stream being transported through it." (*Id.* at 1:39-41). The end-to-end principle was instrumental to the growth of the web in the 1990s. Indeed, a 2003 article published in the *MIT Technology Review* considered the

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[4] By comparison, for example, at the time these patent applications were filed, Google had not yet been founded (Sept. 1998), Facebook would not be launched for another five years (2003), and YouTube not for another seven years (2005).

[5] Citations to the '335 patent of the form *X:YY-ZZ* are to column *X*, lines *YY* to *ZZ*.

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end-to-end aspect of internet protocols to be "[o]ne of the fundamental design principles of today's Internet." S. Garfinkel, "The End of End-to-End?," *MIT Tech. Rev.* (July 1, 2003) (available at https://www.technologyreview.com/s/401966/the-end-of-end-to-end/).

However, adopting end-to-end protocols as the backbone of the internet came with engineering design tradeoffs. As the '335 patent explains, one disadvantage of two-party communications protocols is that "it is difficult to incorporate third party data into an existing data channel between an internet server and an internet client." ('335 patent, 1:44-46). Intermediate network nodes could not contribute to the data stream being transported through them even though the "inclusion of such third party data is often desirable in order to provide value added services or enhanced security and information features." (*Id.* at 1:46-49).

"A main object of the present invention [in the '335 patent] is therefore to provide means for incorporating third party data into existing internet client/server connections in a convenient and flexible way." (*Id.* at 1:55-58). But the inventor sought not to disturb the critical end-to-end nature of the Internet, stating that "it is desired that the [third] party and the data supplied by it do not need to be related to or associated with the client and/or the server." (*Id.* at 1:58-60).

Incorporating third party data into existing internet communications was one of the inventor's *objectives*. But the inventor did not stop there. Rather, he conceived of technical *means* of achieving this objective through methods and systems operating on intermediate network nodes that relied on utilizing and expanding existing internet communications protocols. As the '335 patent explains:

> A basic idea of the invention is to establish the third party channel by intercepting the data communications transmitted on an existing data channel between a server and a client…. [and] if a predetermined data code (for example, a status code of the application protocol) is detected or some other condition is met, the third party data is inserted into the communication on the existing data channel.

(*Id.* at 1:66-2:9). The '335 patent provides many examples of the technical aspects of the invention, which are helpful to understanding the section 101 issues in this case.

As mentioned above, conventional internet communications occurred between an internet

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client and server, shown in blue and red, respectively, in the figure below:
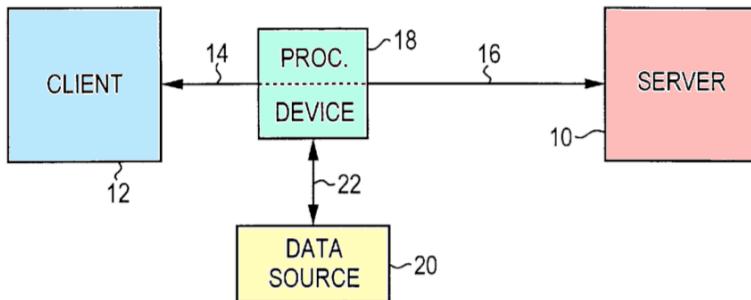
(*Id.*, Fig. 1 (annotations added)). In the case of a client requesting a webpage hosted on a server, the client (*e.g.*, a web browser on an end user's computer) issues an HTTP "GET" request containing the Uniform Resource Locator (URL) of the desired webpage. (*Id.* at 6:36-41). The request is then transmitted over the internet to the server through one or more intermediate network nodes (shown in green in the figure above), including routers, filters, and/or proxy servers, among other types of networking devices present on the internet. (*See id.* at 4:11-13).

The server then composes a response to the request. In the webpage example, the server creates an HTTP response comprising a response header and possibly a message body. (*Id.* at 5:43-45). According to the official specification of the HTTP protocol, the response header includes a numerical status code indicating to the client the nature of the server's response, such as 200 (successful request), 404 (missing resource), or status codes in the 500 range (indicating that the server experienced some error in responding to the request). (*Id.* at 5:46-65; *see also* First Am. Compl., Ex. D, "HTTP Status Code Definitions," ECF No. 13-4).

If the request is unsuccessful, the response usually contains only a header and accompanying status information. But if the request is successful, the response from the server will also typically include a message body containing the requested webpage described pursuant to the Hypertext Markup Language (HTML) protocol. ('335 patent, 3:59-62). According to the HTML protocol, the various components of a webpage, such as texts, images, or links, are separated and denoted by "tags." (*Id.* at 3:44-46, 3:59-62).

The server then transmits the response to the client over the internet, again through one or more intermediate networking devices. In conventional internet communications, the client

receives the response unmodified by these intermediate nodes (*id.* at 1:37-41) and, in the case of a successful request, utilizes the HTTP and HTML information to render the requested webpage in the end user's web browser. But with the inventions covered by the '335 patent, at least one of the intermediate networking devices – called a "processing device distinct from said internet server" in some of the claims of the '335 patent – monitors the response for a "predetermined property," such as an HTTP status code or HTML tag. (*Id.* at 1:66-2:11, 3:59-62, 5:46-65).

If the processing device detects a match between a property of the response and a property it is monitoring for, the processing device will then recognize the response as one it should, by rule, modify in some way. (*Id.* at 5:25-30, 6:7-9). The processing device interfaces with a database (shown in yellow in the excerpted figure above). (*Id.*). This database, referred to as a "data source" in the claims, contains the third party data with which to modify the response. (*Id.*). The third party data contained in the database is *not* part of the original response, and may comprise a further explanation of the error (in the case of an HTTP response header containing a status code in the 400 or 500 range) or additional content (such as advertisements, translations, weather information, news, *etc.*), among other possibilities. (*Id.* at 6:9-16). The processing device then forwards the *modified* response to the client, which displays the modified content to the end user. (*Id.* at 5:30-37).

The intermediate networking device can also use protocol parameters in the server response to improve internet bandwidth utilization. For example, if the server returns a status code indicating an error occurred, such as an upstream timeout, the intermediate networking device can use the bandwidth that would have been used for a successful request to provide third party data in the meantime, thus better utilizing bandwidth. (*See, e.g.*, *id.* at 5:49-55).

In this way, the claimed inventions change how the internet operates and, in particular, how conventional internet communications protocols work to deliver content between clients and servers. Unlike systems relying entirely on conventional internet protocols, the claimed inventions allow for the modification and inclusion of data by intermediate networking devices that are not intended parties to the original communication. At the same time, by utilizing and

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expanding upon those protocols, the claimed inventions preserve the end-to-end design underlying, and fundamental to, the operation of the internet.

2.   The Asserted Claims of the '335 Patent-in-Suit

Blackbird Technologies asserts at least claims 8 and 24 of the '335 patent against Cloudflare. (First Am. Compl., ECF No. 13 ¶ 13). Claim 8 depends on claim 1 ('335 patent, 9:27-30), while claim 24 depends on claim 18 (*id.* at 10:61-64).

Turning first to the independent claims, the innovations described in the preceding section of this Opposition are recited, for example, in claim 18, reproduced below with annotations relating the technical discussion above to the claim language at issue:

> 18. An apparatus for providing an internet third party data channel, said third party data channel being established within an existing data channel between an internet server [*e.g.*, a web server hosting a webpage] and an internet client [*e.g.*, a web browser executing on an end user's computer], said third party data channel connecting a data source [*i.e.*, a database] distinct from said internet server to said internet client, said apparatus comprising:
>
> a processing device distinct from said internet server [*i.e.*, an intermediate networking device like a router, proxy, or filter] for monitoring said existing data channel for a data communication having a predetermined property [*e.g.*, an HTTP status code or HTML tag], said data communication having an intended recipient of one of said internet server and said internet client,
>
> said processing device being adapted, upon detection of said data communication, to access said data source to obtain third party data, to execute a step selected from the group consisting of the step of modifying said data communication in response to said third party data and the step of replacing said data communication in response to said third party data to obtain a resultant data communication, and to send said resultant data communication to said intended recipient.

(*Id.*, claim 18). Independent claim 1 of the '335 patent covers a method of using this apparatus.

Further innovations are recited in dependent claims of the '335 patent. For example, dependent claim 24 covers systems in which "data is only transmitted on said third party data channel when the data transmission rate of said server to said client is below a predetermined threshold," which increases the efficiency of the user's internet connection, as explained above. (*Id.* at 3:65-4:3). Dependent claim 8 covers a method of using this type of system.

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LEGAL STANDARDS

According to the Supreme Court, inventions that "improve the functioning of the computer itself" or that "effect an improvement in any other technology or technical field" are eligible for patent protection. *Alice*, 134 S. Ct. at 2359. Accordingly, the Federal Circuit has repeatedly upheld the validity of patents covering computer-related inventions, including purely software innovations. *DDR Holdings, LLC v. Hotels.com LP*, 773 F.3d 1245, 1249-50 (Fed. Cir. 2014) ("A system useful in an outsource provider serving web pages offering commercial opportunities"); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1330 (Fed. Cir. 2016); ("an innovative logical model for a computer database"); *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1345 (Fed. Cir. 2016) ("A content filtering system for filtering content retrieved from an Internet computer network"); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1307 (Fed. Cir. 2016) ("A method for automatically animating lip synchronization and facial expression"); *Virtual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1255 (Fed. Cir. 2017) ("a memory system with programmable operational characteristics").

Several Federal Circuit observations about software innovations are worth highlighting:

- The Federal Circuit has "cautioned that courts must be careful to avoid oversimplifying the claims by looking at them generally and failing to account for the specific requirements of the claims." *McRO*, 837 F.3d at 1313 (internal quotation omitted).

- The Federal Circuit has drawn a distinction between claims "merely recit[ing] the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet," which are ineligible for patent protection, and claims in which "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks," which are patentable. *DDR Holdings*, 773 F.3d at 1257.

- The Federal Circuit has observed that "[m]uch of the advancement made in computer technology consists of improvements to software that, by their very nature, may not be defined by particular physical features but rather by logical structures and processes. We

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do not see in *Bilski* or *Alice*, or our cases, an exclusion to patenting this large field of technological progress." *Enfish*, 822 F.3d at 1339.

<div align="center">

ARGUMENT

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I.   *Alice* Step 1: The Asserted Claims are Not Directed to an Abstract Idea.

        1.   The Asserted Claims Improve the Functioning of the Internet.

Claims 8 and 24 of the '335 patent are directed to a method and system, respectively, in which an intermediate networking device on the internet monitors specific properties in the protocols associated with communications between a client and server and, based on the detection of those properties, modifies the communication between the client and server only when the data transmission rate between them falls below a certain threshold. As discussed above, the claimed inventions improve the functioning of the internet by allowing for the insertion of third-party data into what were conventionally communications involving only two parties, while simultaneously preserving the end-to-end architecture of the internet and increasing the efficiency of the user's internet connection. Accordingly, "these claims stand apart because they do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *DDR Holdings*, 773 F.3d at 1257.

Contrary to Federal Circuit precedent, Cloudflare oversimplifies the asserted claims in arguing that they are directed to "modifying in-transit communications based on third-party data." (Def.'s Br., ECF No. 38 at 4); *McRO*, 837 F.3d at 1313 (cautioning courts against such over-simplification). While introducing third-party data into such communications is one objective of the '335 patent, the technical means by which this objective is achieved is also disclosed and claimed. Rather than merely reciting modifying in-transit communications, the asserted claims in fact recite: (1) which communications are modified, *i.e.*, communications between an internet client and server, (2) which entity in the internet architecture performs the modification, *i.e.*, an intermediate networking device such as a router, proxy, or filter, (3) how

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that network entity determines whether to make a modification, *i.e.*, based on a predetermined property of the protocol associated with the communication (and not based on the third-party data, as Cloudflare erroneously suggests), (4) further circumstances in which the modification is necessary, *i.e.*, when the data transmission rate between the internet client and server falls below a certain threshold, and (5) what is to be done with the modified communication in those limited circumstances, *i.e.*, communicating the resultant communication to the intended recipient. Thus, the asserted claims "focus on a specific means or method that improves the relevant technology" and, contrary to Defendant's contention, "are [not] directed to a result or effect that itself is the abstract idea." *McRO*, 837 F.3d at 1314.

For similar reasons, Cloudflare's attempt to analogize the asserted claims to "myriad real-world examples" fails. (Def.'s Br., ECF No. 38 n.3). By definition, an analogy eliminates detail. And an analogy that oversimplifies the underlying technology too much is unhelpful in assessing patent eligibility. Thus, Cloudflare's analogies to "finding available space," besides purporting to address only a single claim element, do not capture the technical issues associated with internet communications. Indeed, engineers have long sought to better manage available space, but no one would argue, for example, against the patentability of an improved throttle that freed up space in an automobile fuel line. This is why the Federal Circuit has cautioned against analogizing internet technologies to the "brick and mortar" context, noting that "pre-Internet analog[s] … did not have to account for the ephemeral nature of an Internet 'location' or the near-instantaneous transport between these locations made possible by standard Internet communication protocols." *DDR Holdings*, 773 F.3d at 1258. Such is the case here.

Unlike Fastly, Cloudflare at least attempts to address the asserted claims. Yet Cloudflare dismisses them entirely, asserts without analysis that they "address the same abstract idea," and suggests that this Court look at the asserted claims' "as a whole." (Def.'s Br., ECF No. 38 at 4). But Cloudflare's arguments turn Federal Circuit precedent on its head. When advising lower courts to consider the claims "as a whole" in assessing patent eligibility, the Federal Circuit "look[s] to … the individual claim elements to determine whether the claims contain an element

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or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself." *McRO*, 837 F.3d at 1312 (internal quotations and modifications omitted). Cloudflare does precisely the opposite in arguing that an examination of a particular claim element – the data transmission rate-related aspects of claims 8 and 24 – should be ignored in favor of the claims "as a whole."

Cloudflare next incorrectly argues that, with respect to the '335 patent, "computers are invoked only as a tool." (Def.'s Br., ECF No. 38 at 6). Not true. As explained above, the inventions recited in the asserted claims of the '335 patent change and improve how the internet works. That computer- and internet-related technologies were used and combined to do so is precisely the point for, as the Supreme Court has recognized, inventions that "improve the functioning of the computer itself" are eligible for patent protection. *Alice*, 134 S. Ct. at 2359. It is hard to imagine how the functioning of a computer could be improved without relying on such technologies. In apparent support of its assertion, Cloudflare cites a case in which the Federal Circuit invalidated a patent directed to a "system for generating financial packages." (Def.'s Br., ECF No. 38 at 7 (citing *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044 (Fed. Cir. 2017))). But processing loan applications is hardly analogous to methods and systems that expand internet communications protocols to improve internet bandwidth utilization.

Cloudflare also irrelevantly notes that the Federal Circuit's decisions in "*Enfish* and *McRo* [sic] do not exempt software patents from § 101." (Def.'s Br., ECF No. 38 at 6). But Cloudflare misses the point of *Enfish* and *McRO*. Of course, software patents are not exempt from section 101. Indeed, no patent is exempt. But rather than holding that all software patents are invalid under section 101, *Enfish* and *McRO* both stand for the proposition that software is patentable where, as here, it reflects a technical solution to a technical problem.

2. *Bascom*, Not *Intellectual Ventures*, is the Most Analogous Case.

Relying here on the Federal Circuit's decision in *Intellectual Ventures* would be misplaced. (Def.'s Br., ECF No. 38 at 4-6 (discussing *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307 (Fed. Cir. 2016))). As a threshold matter, Cloudflare provides no analysis

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of the asserted claims under *Intellectual Ventures*, other than to "agree[] with Fastly that *Intellectual Ventures v. Symantec* is a particularly relevant and persuasive example." (Def.'s Br., ECF No. 38 at 4-5). Critically, nothing in the record in *Intellectual Ventures* indicated that the claimed inventions involved a technical solution to a technical problem, unlike here. 838 F.3d at 1313-14. The other cases cited by Cloudflare clearly involved using computers only as tools. *EasyWeb Innovations, LLC v. Twitter, Inc.*, 689 F. App'x 969 (Fed. Cir. May 12, 2017) (publishing messages to the internet); *Smartflash LLC v. Apple Inc.*, 680 F. App'x 977 (Fed. Cir. Mar. 1, 2017) (validating payment data); *Clarilogic, Inc. v. FormFree Holdings Corp.*, 681 F. App'x 950 (Fed. Cir. Mar. 15, 2017) (processing financial data).

A case more analogous to the present one is the Federal Circuit's decision in *Bascom*, in which the following claim was found patentable:

> 1. A content filtering system for filtering content retrieved from an Internet computer network by individual controlled access network accounts, said filtering system comprising:
>
> a local client computer generating network access requests for said individual controlled access network accounts;
>
> at least one filtering scheme;
>
> a plurality of sets of logical filtering elements; and
>
> a remote ISP [internet service provider] server coupled to said client computer and said Internet computer network, said ISP server associating each said network account to at least one filtering scheme and at least one set of filtering elements, said ISP server further receiving said network access requests from said client computer and executing said associated filtering scheme utilizing said associated set of logical filtering elements.

Bascom, 827 F.3d at 1345. The asserted claims of the '335 patent do much the same thing in much the same way, and in fact recite even more technical innovation than the *Bascom* claims. In *Bascom*, a remote ISP server applied filtering schemes to network access requests from clients to remove objectionable content (*e.g.*, material unsuitable for children). Similarly, in the asserted claims, a processing device distinct from the server monitors internet communications between a client and server for protocol parameters and, upon the detection of such parameters, modifies

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those communications with third-party data from a database connected to the processing device and then transmits the modified communication to the intended recipient. By relying on the communication's protocol parameters and not merely the content of those communications, the asserted claims are actually tied more closely to the operation of the internet than the *Bascom* claims. Of course, the additional data transmission rate-related aspects of claims 8 and 24 go beyond the system claimed in *Bascom* and further establish that the asserted claims readily surpass the threshold question of patentability.

As the Federal Circuit explained in *Intellectual Ventures*, the *Bascom* claims "improved on an existing technological process by describing 'how [a] particular arrangement of elements is a technical improvement over prior art ways of filtering [Internet] content.'" 838 F.3d at 1316. Such is the case here.

II. *Alice* Step 2: The Asserted Claims Reveal an "Inventive Concept."

If the Court finds that the asserted claims are not directed to an abstract idea, then the inquiry is over, and the claims are valid. However, even if the Court were to find the claims directed to an abstract idea, the claims pass muster under the second step in *Alice*, which focuses on whether there is an "inventive concept" in the "ordered combination" of the elements in the claims. *Bascom*, 827 F.3d at 1349 ("An inventive concept that transforms the abstract idea into a patent-eligible invention must be significantly more than the abstract idea itself").

Here, the claims of the '335 patent do not amount to "an instruction to implement or apply the abstract idea on a computer." *Id.* The claims go far beyond merely reciting the alleged abstract idea of "modifying in-transit communications based on third-party data." As explained in the background section of the '335 patent, conventional intermediate networking devices on the internet were "transparent" to the endpoints and did *not* modify communications in-transit between them. ('335 patent, 1:37-44). The inventions recited in the asserted claims change "this paradigm of a two party communication." (*Id.* at 1:45-49). And the asserted claims explain how to effect this change. The inventive concept here is a processing device distinct from the internet server that is adapted to monitor and detect certain properties in the protocol parameters of in-

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transit communications and, if such properties are present, to modify the communication with third party data from a data source.

Closely examining the alleged abstract idea – here, "modifying in-transit communications based on third-party data" – shows that the asserted claims reveal an inventive concept. The asserted claims do not recite modifying in-transit communications "based on third-party data," but rather modifying such communications *with* third-party data based "upon detection of said data communication" "having a predetermined property." Cloudflare misstates how the claimed inventions work at the most basic level and, in so doing, glosses over the inventive concept, *i.e.*, how the claimed inventions recite the technical means to achieve the stated ends.

Overlooking the inventive concept, Cloudflare incorrectly argues that "[t]he claims recite conventional computer elements." (Def.'s Br., ECF No. 38 at 8-10). To be clear: An intermediate networking device on the internet that used protocol parameters to modify communications with third party data was *entirely unconventional* in the 1990s and there is nothing "generic" about such a device. And even if the inventive concept were to lie entirely in software (which it does not), Cloudflare is plainly wrong to argue that software inventions are patent ineligible simply because they can run on general-purpose hardware. *See, e.g.*, *Enfish*, 822 F.3d at 1335, 1338 ("Software can make non-abstract improvements to computer technology just as hardware improvements can," and "we are not persuaded that the invention's ability to run on a general-purpose computer dooms the claims.").

Thus, the cases cited by Cloudflare under *Alice* step 2 are distinguishable as using computers simply as tools, which is not the case here. *See, e.g.*, *Shortridge v. Found. Constr. Payroll Serv., LLC*, 655 F. App'x 848 (Fed. Cir. 2016) ("public works construction payroll processing for a contractor"); *TDE Petro. Data Sol'ns, Inc. v. AKM Enter., Inc.*, 657 F. App'x 991 (Fed. Cir. 2016) ("determining the state of an [oil] well operation"); *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315 (Fed. Cir. 2017) ("searching a database for information"). Rather, the Federal Circuit's *Virtual Memory* case is more analogous. There, the Federal Circuit upheld a patent directed to a memory system having "programmable operational

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characteristics," as such characteristics improved the functioning of the memory system. 867 F.3d at 1259. Here, the claims cover improved intermediate networking devices that, among other things, rely on protocol parameters to improve the way internet communications work.

III.   Cloudflare Has Its Own Patent on the Same Technology.

Some 12 years after the applications leading to the '335 patent were filed, Cloudflare filed for its own patent on nearly identical technology, indeed, the very same technology accused here. The striking similarity between the claims in the Cloudflare patent and the claims of the '335 patent is shown in a side-by-side comparison. (Gerasimow decl., Ex. B, at 1).

The U.S. Patent and Trademark Office initially rejected the Cloudflare patent application under section 101. The Cloudflare claims recited "[a] method in a proxy server to modify Internet responses" by "receiving, at the proxy server from a client device, a request for a network resource that is hosted at an origin server …, scanning, by the proxy server, the HTML page to locate one or more modification tokens …, automatically modifying, by the proxy server, at least a portion of the content of the HTML page …, and transmitting, by the proxy server, the modified HTML page to the client device." The USPTO initially asserted that "the claim(s) is/are directed to the abstract idea of modifying internet responses." In response, Cloudflare argued that the claims "are not directed to an abstract idea" and that "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." Cloudflare did not even feel the need to analyze its claims under *Alice* step two. (Gerasimow decl., Ex. C, at 11-12 (citing *DDR Holdings*)). The USPTO subsequently withdrew its rejection and allowed the Cloudflare patent to issue.

It is therefore clear that Cloudflare, outside the context of this litigation, believes that monitoring and modifying internet communications based on protocol information is a technical solution to a technical problem, and that those solutions include patentable software.

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CONCLUSION

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For at least the foregoing reasons, Blackbird Technologies respectfully requests that Cloudflare's motion for judgment on the pleadings be denied.

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Dated this 22nd day of December, 2017   WALKER STEVENS CANNOM YANG LLP

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